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BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of:

VERILINK CORPORATION

Petition for Rulemaking to Amend
the Commission's Part 68 Rules
to Authorize Regulated Carriers
to Provide Certain Line Build Out
Functionality as a Part of Regulated
Network Equipment on Customer Premises

RM-8158

REPLY

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Dated: February 23, 1993

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TABLE OF CONTENTS

	<u>PAGE</u>
SUMMARY	i
I. THE COMMENTS DEMONSTRATE WIDESPREAD SUPPORT FOR VERILINK'S PETITION	4
A. Carrier Provision of LBO Should be Permitted in Order to Eliminate the Customer Confusion and Inconvenience, as Well as the Network Harm, Occurring Under the Current Rules	6
B. The Proposed Amendment Will Reduce -- Not Increase -- Customer Confusion and Inconvenience	8
II. THE COMMENTERS AGREE THAT THE PROPOSED RULE REVISION WOULD FACILITATE THE IMPLEMENTATION OF THE INDUSTRY-APPROVED ANSI DS-1 METALLIC INTERFACE STANDARD	10
III. NO SOUND REASON EXISTS TO RETAIN RULES THAT PERPETUATE CONSUMER INCONVENIENCE, EXPENSE AND NETWORK HARM	14
CONCLUSION	16

SUMMARY

The Comments contained overwhelming support for Verilink Corporation's Petition for Rulemaking urging the Commission to amend Part 68 of the Commission's Rules to authorize line build out ("LBO") functionality to be provided in the transmission path of 1.544 Mbps ("DS-1") services as a component of regulated network interface equipment located on customer premises. The Comments revealed widespread agreement that the proposed amendment will eliminate a carrier/customer "joint engineering" process that is currently a source of customer confusion, dissatisfaction, and expense. The necessity under the current rules for customers to consult with carriers in order to properly adjust LBO settings also is a source of network harm caused by users who inadvertently misadjust LBO settings. Most parties also shared Verilink's view that this modest amendment will bring the Commission's rules in line with the current direction of technical standards for digital services and equipment. Allowing regulated network provision of LBO will in particular facilitate the implementation of the industry-accepted technical ANSI DS-1 Metallic Interface standard, as well as the introduction and deployment of advanced transmission services in the public switched network.

Virtually all Commenters agree that the proposed Part 68 rule amendments will not impair competition in the equipment market or disadvantage customer premises equipment vendors. To

the contrary, the amendment will serve the public interest by significantly benefitting CPE customers, network users and the manufacturing industry as a whole. No party has submitted any credible reason to retain rules that do not serve users, the telecommunications industry, or the Commission's public interest objectives. Given the broad support for the Petition, the Commission should grant Verilink's Petition and promptly initiate a rulemaking proceeding to adopt the proposed rule amendment.

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REPLY

Verilink Corporation ("Verilink"), pursuant to Section 1.405 of the Commission's Rules, 47 C.F.R. § 1.405 (1991), hereby submits its Reply to the Comments submitted in the above-captioned proceeding initiated to consider Verilink's Petition for Rulemaking ("Petition") filed at the Commission on December 14, 1993. Verilink's Petition proposes that the Commission amend the Part 68 rules to permit carriers to provide line build out ("LBO") functionality in the transmission path of DS-1 (1.5444 Mbps) services as a component of regulated network equipment located on customer premises.^{1/}

Comments were filed in this proceeding on February 8, 1993.^{2/} The Comments revealed overwhelming support for

^{1/} LBO attenuates strong signals emitted by CPE where the distance between regenerators or between a regenerator and the transmit/receive equipment may be short. LBO prevents excessive signal power of the CPE from being delivered into the network.

^{2/} The following parties filed comments supporting Verilink's Petition: The Ameritech Operating Companies; The Bell Atlantic
(continued...)

Verilink's Petition from diverse parties. No party asserts any sound reason for the Commission to deny users, carriers and equipment vendors the benefits that would result from the modest amendment to the rules proposed by Verilink. Accordingly, the Commission should immediately initiate a rulemaking proceeding to adopt the proposed rule amendments.^{2/}

In the Petition, Verilink described several significant benefits that would accrue to users, carriers and manufacturers of customer premises equipment ("CPE") if the Commission's Rules were revised to permit carrier-provided LBO in the DS-1 transmission path. First, the proposed amendment will reduce customer confusion, dissatisfaction and unnecessary customer service expenses (borne by carriers, equipment manufacturers and, ultimately, users) by eliminating the need for users and carriers (and often manufacturers) to engage in a cumbersome and inefficient "joint engineering" process whereby users must seek assistance with DS-1 provisioning in order to properly adjust LBO settings.^{4/} Second, the amendment will eliminate a source of

^{2/} (...continued)

Telephone Companies; BellSouth Telecommunication, Inc.; GTE Service Corporation; Integrated Network Corporation; Larus Corporation; The NYNEX Telephone Companies; PairGain Technologies, Inc; and The Southwestern Bell Telephone Company. The only party opposing Verilink's petition is the Independent Data and Computer Manufacturers Association ("IDCMA").

^{3/} Verilink specifically proposed that Section 68.308(h)(2) of the Commission's Rules, 47 C.F.R. § 68.308(h)(2)(1991), be amended to delete reference to Options B and C for LBO settings, leaving Option A (at 0 dB) as the only LBO attenuation setting to be selected.

^{4/} Petition, at 7-11.

network harm -- in the form of crosstalk -- that is often inadvertently caused by customers attempting to adjust LBO settings on their CPE.^{5/}

Third, the proposed amendment will bring the Commission's rules in line with the direction of industry practices and standards.^{6/} In particular, the amendment will facilitate the implementation of the American National Standard for Telecommunications Carrier-to-Customer Installation DS-1 Metallic Interface BSR T1.403 standard ("ANSI DS-1 Metallic Interface Standard").^{7/} Finally, the Petition noted that the proposed amendment, if adopted, will also encourage greater use of DS-1 services by smaller business customers with historically limited telecommunications expertise,^{8/} create opportunities to lower consumer prices,^{9/} and foster competition in the CPE market to the extent that CPE vendors elect to lower equipment costs by eliminating redundant LBO functionality in their products.^{10/} The amendment will also be consistent with the deployment of advanced transmission technologies, including integrated services

^{5/} Id. at 15-16.

^{6/} Id. at 14-20.

^{7/} Id. at 12-14.

^{8/} Id. at 19-20.

^{9/} Id. at 11.

^{10/} Id. at 12-13.

digital network ("ISDN") and the efficient technological development of the U.S. telecommunications infrastructure.^{11/}

I. THE COMMENTS DEMONSTRATE WIDESPREAD SUPPORT FOR VERILINK'S PETITION

The Commenters in this proceeding were virtually unanimous in their support for the proposed rule amendment. Major telephone company carriers -- as well as several equipment vendors -- all identified similar customer service problems at provisioning of DS-1 services that would be alleviated if the Commission adopts the proposed amendment.

NYNEX, for example, states that because responsibility for LBO level coordination is left with the customer, company technicians and customers "must often contend with false trouble signals, substantial 'down-time,' and situations that could jeopardize the performance of all DS-1 circuits in a particular central office."^{12/} Bell Atlantic states that customers "often contact either the manufacturer or the telephone company to determine the proper [LBO] setting, increasing the amount of administrative time and expense needed to install the service. Bell Atlantic reports that "[i]n some instances, [customers] fail to call an expert but, instead use the wrong setting, then

^{11/} Id. at 2.

^{12/} NYNEX Comments, at 2.

complain if the signal level is either too low, reducing throughput, or too high, causing cross-talk."^{13/}

BellSouth, a company that sought more than four years ago to alleviate the burdens of the existing LBO rules in a waiver request filed at the Commission, also corroborates the existing customer confusion and unnecessary expenses described in the Petition. BellSouth agrees with Verilink that under the current rules users, carriers and vendors are not well-served. Both BellSouth and Southwestern Bell support Verilink's view that end user customers and network providers would realize significant operational and maintenance efficiencies if the Commission's Rules were amended to allow network provision of LBO.^{14/} Ameritech and GTE also concur with Verilink that eliminating the joint engineering process will alleviate current user confusion and reduce expenses.^{15/}

Further, equipment vendors Integrated Network Corporation, Larus Corporation, and PairGain Technologies, Inc. strongly support Verilink's view that the current rules should be changed to permit regulated carrier provision of LBO. All three equipment manufacturers cite real-world, practical reasons that support the modest amendment proposed in the Petition. Larus, for example, states that its "field service spends time on the phone discussing the settings of equipment with both the

^{13/} Bell Atlantic Comments, at 2.

^{14/} Bellsouth Comments, at 2; Southwestern Bell Comments at 5-6.

^{15/} Ameritech Comments at 2; GTE Comments at 3-4.

regulated carrier and customer." According to Larus, "the present system results in the various parties involved trying all [LBO] combinations . . . in some cases, caus[ing] harm to the network, as higher level signals are inadvertently launched towards the network."^{16/}

Indeed, the record in this proceeding is replete with instances of carriers and vendors receiving false trouble reports and customer service calls as a result of customer confusion in adjusting LBO levels at installation or when the customer reconfigures or replaces DS-1 CPE. The Comments thus contain strong evidence that the modest rule change proposed in the Petition will eliminate customer service problems and a source of network harm associated with the current CPE provision of LBO.

A. Carrier Provision of LBO Should be Permitted in Order to Eliminate the Customer Confusion and Inconvenience, as Well as the Network Harm, Occurring Under the Current Rules

IDCMA stands alone in opposing the Petition. IDCMA's principle argument against the proposed amendment appears to be that the customer confusion, dissatisfaction and expense reported by Verilink -- and corroborated by all other parties -- does not warrant a change in the rules. Specifically, IDCMA challenges Verilink's assertion that the current LBO rules cause significant

^{16/} Larus Comments at 1. With respect to network harm, for similar reasons, BellSouth believes that network provision of LBO would avoid those instances in which customers disrupt network services by inadvertently changing the LBO setting during CPE replacement or maintenance activities. BellSouth Comments, at 3.

unnecessary customer inconvenience and added expense. Despite the practical, real-world experience cited in the Petition and echoed by all other parties, IDCMA states merely that the joint engineering process "is hardly 'time-consuming, costly, and inefficient'" and that Verilink's description of customer confusion arising out of LBO settings are "exaggerated."^{17/} IDCMA fails to provide any convincing evidence -- or any evidence at all -- that the customer confusion, inconvenience and dissatisfaction witnessed by Verilink and the other Commenters does not in fact exist or should be disregarded. IDCMA also fails to address the network harm that can and does result from customers' incorrect adjustment of LBO levels. While IDCMA suggests that the customer burden and network harm existing under the current rules is insignificant, IDCMA does not attempt to substantiate its position. Instead, IDCMA merely states that IDCMA's members have "experienced no comparable problems. .

. "^{18/}

Notwithstanding IDCMA's generalized opposition to any change in the LBO rules, Verilink strongly believes that the rule amendments allowing carrier-provided LBO will significantly benefit the public interest. IDCMA, in effect, urges the Commission to ignore the adverse impact that its rules have on

^{17/} IDCMA Comments, at 7-8.

^{18/} Id. The Commission should recognize, however, that IDCMA's member companies account for a relatively small part of the DS-1 CPE manufacturing business. Indeed, none of the three leading equipment manufacturers of DS-1 CPE -- Verilink, ADC/Kentrox and Larse Corporation -- participate in IDCMA.

users, carriers and vendors. Verilink submits that the public interest in encouraging high-quality service and avoiding network harm clearly requires the Commission to address the need for the modest rule change proposed in the Petition. Not only will such an amendment reduce customer confusion, expense and network harm, but it will also significantly improve customer perception of DS-1 service and channel service unit ("CSU") equipment. From the user's perspective, equipment and service troubles will diminish and DS-1 circuit provisioning will be relatively simple and easy. These benefits -- in addition to any drop in CPE prices that may occur as a result of eliminating the redundant CPE LBO features -- will encourage greater use by, and more efficient provisioning of DS-1 services to, U.S. users.

B. The Proposed Amendment Will Reduce -- Not Increase -- Customer Confusion and Inconvenience

IDCMA also erroneously claims that the proposed rule amendment would actually cause greater customer inconvenience by requiring CPE to be moved closer to the network interface or install signal repeaters.^{19/} In making this erroneous argument, however, IDCMA incorrectly assumes that carrier provision of LBO affects the flexibility of CPE placement on a customer's premises. In fact, neither the requested rule change nor carrier provision of LBO would have any impact on the location of CPE relative to the network interface. The issue of where CPE should

^{19/} IDCMA Comments, at 10.

be located is not relevant to the question of whether carriers are permitted to provide LBO; rather, CPE location is affected by the physical limits of interconnection and where the serving carrier places the network interface. This has become an issue only where minimum point of penetration ("MPOP") policies have been adopted as a result of the Commission's action in Docket 88-57.^{20/}

The existing ANSI standard, which was written prior to the Commission's action in Docket 88-57, assumes carrier provision of LBO and suggests a limit of approximately 250 feet on the length of wiring between DS-1 CPE and the network interface as the best method of assuring CPE/network interoperability, eliminating concern for near-end cross talk interference, and minimizing overall costs. The extended CPE-to-network access wiring implicit in Docket 88-57 has complicated recent industry attempts to rewrite T1.403 by requiring difficult tradeoffs in the allocation between network providers and users of an assumed total wiring length of less than 2000 feet between CPE and the last outside plant regenerator. The tentative agreement reached in the ANSI process allows users up to approximately 750 feet of 24 gauge wiring between the CPE and network interface. In this situation, precise setting of LBO is often impossible since the length and gauge of such long runs of premises wiring are likely

^{20/} Review of Sections 68.104 and 68.213 of the Commission's Rules Concerning Connection of Simple Inside Wiring to the Telephone Network, CC Docket No. 88-57, FCC 90-220, Report and Order and Further Notice of Proposed Rulemaking (released June 14, 1990), recon. denied, DA 90-1082 (released August 13, 1990).

not known. It also exposes users to crosstalk interference which the extant standard precluded.

What IDCMA apparently does not understand is that LBO setting rules will be the same regardless of whether LBO is provided by the network provider or as a CPE feature. Indeed, there is no connection between who provides LBO and the flexibility of location of CPE or implementation of the requirements of the Commission's order in Docket 88-57. The Commission should therefore reject IDCMA's arguments.

II. THE COMMENTERS AGREE THAT THE PROPOSED RULE REVISION WOULD FACILITATE THE IMPLEMENTATION OF THE INDUSTRY-APPROVED ANSI DS-1 METALLIC INTERFACE STANDARD

The Comments revealed widespread agreement that, in addition to the other public interest benefits discussed above, the rule change proposed in the Petition will permit implementation of the ANSI DS-1 Metallic Interface Standard. The ANSI standard was adopted with the overwhelming support of firms representing a broad cross-section of the telecommunications industry, including users, carriers, and CPE vendors. The President of Larus Corporation states in Larus' comments that, based on his personal participation in the ANSI standards-setting process, the industry worked together to craft a standard that would allow a uniform, technology-independent interface that would fairly account for the needs of users, carriers and vendors. He states:

After much debate and consideration, the standard was written to allow present equipment to be supported, as well as allow the provision of new services, such as fiber

delivered T1, without going back and revising the standard, or the customer equipment. . . . [the ANSI standard] is being used by regulated carrier, manufacturer, and customer alike to offer, build and specify present and future services. ^{21/}

Virtually all parties addressing this issue believe that the fact that the proposed amendment will facilitate implementation of the ANSI DS-1 Metallic Interface standard is another important reason strongly favoring a grant of Verilink's Petition.

Once again, IDCMA is the lone voice opposing the concept that there are significant benefits to be realized by harmonizing the Commission's Rules and the ANSI technical industry standards. IDCMA alleges that Verilink "misrepresents" the appropriate relationship between the ANSI standards and the Commission's CPE policy. Apparently, IDCMA has seriously misread Verilink's Petition and claims that Verilink is proposing that the ANSI standard should dictate FCC policies and that Commission should "mold its rules around ANSI Committee T1 standards development." ^{22/}

Contrary to IDCMA's misinterpretation, however, Verilink does not propose that the Commission proceed to revise its rules for the purpose of conforming to ANSI standards setting. Indeed, Verilink expressly recognized in its Petition that

Part 68 and the ANSI standard address distinct, albeit related, network concerns. The Part 68 rules are designed to protect the network from harm. The ANSI DS-1 interface standards are intended to ensure

^{21/} Larus Corporation Comments, at 2

^{22/} IDCMA Comments, at 11.

interoperability and adequate performance of customer equipment with the network."^{23/}

The Petition also states that the ANSI standard is not inconsistent with the current Part 68 rules since the ANSI standard provides only that users uniformly select the 0 dB option already authorized by Part 68.

Verilink strongly believes that the Commission should be aware of the impact of the Part 68 rules on industry-developed ANSI standards and, where the Commission's public interest policies are served and not undermined, the Commission should attempt to ensure that the Part 68 Rules are consistent with industry-accepted standards. The Comments clearly support this view. Verilink opposes IDCMA's apparent belief that the Commission's Rules should exist in a vacuum -- regardless of any adverse impact on users and the industry arising from inconsistencies between FCC rules and technical ANSI industry standards. Verilink, as well as many supporting commenters, favors a Part 68 program that protects the network from harm and ensures that users can obtain high quality service by implementing rational and efficient rules that can accommodate the practical realities faced by users, network providers, and equipment vendors. The proposed amendment to Part 68 would further the Commission's goals in preventing network harm, and encouraging efficient, high quality service to users, as well as

^{23/} Petition at 12.

supporting the voluntary industry consensus embodied in the ANSI standard.

IDCMA also urges the Commission to disregard the ANSI DS-1 standard because, according to IDCMA, "the Committee T1 is in the process of revising the DS-1 standard to conform to the Commission's CPE rules."^{24/} IDCMA has neglected to mention, however, that the T1 committee is simply attempting to revise the ANSI DS-1 Metallic Interface standard to conform expressly with the Commission's decision in the 1991 BellSouth Order a decision that, in part, prompted Verilink's Petition. In the BellSouth Order,^{25/} the Commission decided not to grant BellSouth's request for a declaratory ruling, or waiver, that carriers can provide LBO in the DS-1 path under current FCC rules. The Commission there declined to grant BellSouth's request based on procedural grounds and invited interested parties to initiate a rulemaking proceeding addressing certain specific issues.

It was specifically in response to the BellSouth Order that Verilink filed its Petition. It is therefore disingenuous for IDCMA to now assert that industry attempts to comply strictly with the Commission's order is reason not to initiate the rulemaking proceedings and issues identified in the BellSouth Order. Contrary to IDCMA's implicit suggestion, then, the

^{24/} IDCMA Comments, at 12.

^{25/} BellSouth's Petition for Declaratory Ruling or, Alternatively Requests for Limited Waiver of the CPE Rules to Provide Line Build Out (LBO) Functionality as a Component of Regulated Network Interface Connectors on Customer Premises, DA 91-664 (released June 6, 1991) ("BellSouth Order").

current ANSI deliberations do not indicate that the industry has now changed its collective opinion regarding the merits of the ANSI DS-1 Standard. Indeed, that standard, representing the product of a long, considered, open industry debate, retains virtually unanimous support.

III. NO SOUND REASON EXISTS TO RETAIN RULES THAT PERPETUATE CONSUMER INCONVENIENCE, EXPENSE AND NETWORK HARM

IDCMA is the single commenting party that opposes the modest rule amendment proposed by Verilink. All other parties -- carriers and manufacturers alike -- strongly agree that carrier-provision of LBO in the DS-1 transmission path will benefit consumers and those who provide services and equipment to them. IDCMA zealously adopts its intractable position apparently in response to some perceived injury that will occur to the CPE industry if carriers are permitted to provide LBO in the DS-1 transmission path.

Except for IDCMA, the commenting parties agree that the proposed rule will not impair or in any way harm CPE vendors or competition in the CPE industry. The proposed rule revision will not require that CPE vendors incorporate new functionality or change out equipment. LBO is a function already present in the network and thus carrier-provision of LBO will not require the addition of substantial new network capabilities. While IDCMA objects to a rule change that would increase efficiencies and benefit users, among others, IDCMA fails to identify any specific

harm that the CPE industry stands to suffer as a result of the proposed rule change.

Rather, IDCMA simply argues that the confusion and expense associated with LBO under the current rules cited by Verilink and attested to by other customers is "exaggerated." IDCMA's view is not borne out by the comments of all other parties participating in this proceeding. Those parties' comments document repeated instances of customer confusion regarding LBO adjustments leading to unnecessary customer dissatisfaction with CPE vendors and carriers, added administrative expense of customer service calls, and network harm in the form of crosstalk. Together, these difficulties in service and equipment provisioning also create an artificial disincentive to use DS-1 services particularly by smaller, less sophisticated users.

IDCMA also misconstrues Verilink's support for a Part 68 rule change as it relates to the voluntary industry consensus embodied in ANSI standards. No party, including Verilink, proposes that ANSI standards should dictate FCC policy. However, where harmonization of the Commission's Rules and accepted industry technical standards would benefit users, carriers and vendors, would further Commission objectives, then the public interest would be served by amending the Commission's Rules. That is the case here.

Despite the overwhelming support for the proposed amendment, IDCMA urges the Commission to reject Verilink's petition. Indeed, IDCMA even urges the Commission to go no further and

refrain from initiating a rulemaking to consider the proposed amendment. IDCMA's position is directly contrary to the Commission's express recognition in the BellSouth Order that a change in the rules to permit carrier-provided LBO is appropriate for a rulemaking proceeding. In effect, IDCMA urges the Commission to "close its eyes" to certain practical difficulties that burden consumers, carriers, vendors and degrade the quality of public switched network service -- difficulties that can easily be remedied by a modest rule change.^{26/} IDCMA fails to assert any reason to justify Commission inaction and, therefore, the Commission should promptly initiate a rulemaking to adopt rules that will permit carrier-provided LBO in the DS-1 path as a part of regulated equipment.

CONCLUSION

The Comments reveal overwhelming support for the modest Part 68 rule amendments proposed in Verilink's Petition. The proposed rule changes will eliminate the carrier/customer "joint engineering" process and the associated customer confusion, dissatisfaction and expense and a source of network harm. The amendment will also permit the implementation of the ANSI DS-1 Metallic Interface Standard and eliminate a source of network

^{26/} While Verilink does not believe that a amendment of Section 64.702(e) of the Commission's Rules is necessary to permit carrier-provided LBO as proposed in the Petition, see IDCMA Comments, Verilink requests that such a rule amendment be made to the extent that the Commission determines that such a revision is necessary.

harm. Virtually all commenting parties agree that the proposed amendment would not injure CPE vendors or impair competition in the CPE market. No party submitted any credible reason to retain rules that do not serve users, the telecommunications industry or the Commission's public interest objectives. The proposed amendments will serve the Commission's objective to promote the widespread provision of efficient, high quality telecommunications services in the United States. Accordingly, the Commission should grant Verilink's Petition and promptly initiate a rulemaking proceeding to adopt the proposed rule amendment.

Respectfully submitted,

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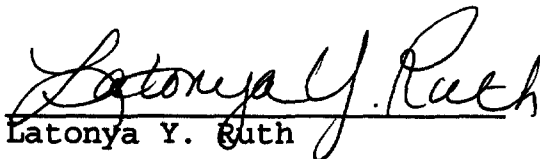
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